-- Calendar Year 2010 --
Highway Performance Monitoring System (HPMS) Update Instructions

Due by: April 15, 2011 Please submit updated spreadsheets to Bernard Lee, SCAG staff at **HPMS@scag.ca.gov**

INSTRUCTIONS: The electronic spreadsheet (an Excel 97-2003 file) for your jurisdiction contains HPMS records to update for calendar year 2010. Open the file then tab through the cells on the form and input the requested item updates for each record. Make sure you highlight and bold any changes you make to the spreadsheet and remember to save your changes. The spreadsheet shows the existing entry for each item. If there is no change to be made to the entry, then it is not necessary to input anything.

ITEM 10 – Linear Reference System (LRS): We are looking for your identifying system for your streets. FHWA is going to a new system and one of the big changes is going from our current Section ID to a GIS based system.

ITEM 30 – Section Length: This is the length in miles as measured along the centerline of the roadway.

ITEM 33 - Annual Average Daily Traffic (AADT): For two-way facilities, provide the bidirectional AADT; for one-way couplets, one-way roadways, and ramps, provide the directional AADT. If average weekday, average weekly, or average monthly traffic is calculated or available, it must be adjusted to represent the annual average daily traffic (AADT). AADT is an average daily value that represents all days of the reporting year.

ITEM 35 – Measured Pavement Roughness (also known as International Roughness Index or IRI): A statistic used to estimate the amount of roughness in a measured longitudinal profile. For investment requirements modeling to estimate pavement deterioration, section deficiencies, and necessary improvements, in cost allocation studies, in pavement condition trends

***New Item* – Surface Type:** Surface type on a given section. For investment requirements modeling to estimate pavement deterioration and loading history, for the cost allocation pavement model, and for the national highway database.

Code	Description
1	Unpaved
2	Bituminous
3	JPCP - Jointed Plain Concrete Pavement
4	JRCP - Jointed Reinforced Concrete Pavement
5	CRCP - Continuously Reinforced Concrete Pavement
6	Asphalt-Concrete (AC) Overlay over Existing AC Pavement
7	AC Overlay over Existing Jointed Concrete Pavement
8	AC (Bituminous Overlay over Existing CRCP)
9	Unbonded Jointed Concrete Overlay on PCC Pavement
10	Bonded PCC Overlay on PCC Pavement
11	Other (includes "whitetopping")

***New Item* – Rutting:** Average depth of rutting. For pavement modeling purposes

***New Item* – Faulting:** The average vertical displacement (difference in elevation) between adjacent jointed concrete panels in the direction of travel.

***New Item* – Cracking:** Estimate of percent area with fatigue type cracking for AC pavements (typically in wheel path) and percent of slabs with cracking for PCC pavements.

EXAMPLE: For AC pavements an estimate of the total area of fatigue cracking for the Sample Panel section should be reported. As an example, if the Sample Panel section is a single lane, 12 foot in width, 1 mile in length; total area = 63,360 sq. ft.

The fatigue cracking in the sample is 500 foot in length and 2 foot in width in each wheel path:

500 ft. * 2 ft * 2 wheelpaths = 2,000 sq. ft.

2,000 sq. ft. / 63,360 sq. ft. = 3.2 percent area of fatigue cracking which can be reported as 5 percent

***New Item* – Year Last Construction:** The year in which the roadway was constructed or reconstructed. Reconstruction is the replacement of the existing pavement structure with an equivalent or increased structure. Although recycled materials may be used in the new pavement structure, reconstruction usually requires the complete removal and replacement of at least the old pavement surface, and often also the base. If a new pavement surface were placed without first removing the old pavement surface, the resulting pavement should be considered an overlay (surface improvement, not construction), even if the existing pavement was rubblized prior to placing the new pavement surface.

***New Item* - Last Overlay Thickness:** Thickness of the most recent pavement overlay. Code the actual measured value to the nearest 0.5 inch.

***Any assistance you can give me on these new items will be greatly appreciated. You can find the items in the new HPMS Field Manual at **http://www.fhwa.dot.gov/policy/ohpi/hpms/fieldmanual/chapter4.htm**

ITEM 53 - Year of Surface Improvement: 0.5 inch or more of compacted pavement material must be put in place for it to be considered a surface improvement. Completion date is the actual date the construction ended or the date when the project was opened to traffic

ITEM 80 – Speed Limit: Enter the daytime speed limit for autos posted or legally mandated.

ITEM 81 - % Single Unit Trucks in Peak Period: Code percent single unit truck traffic in the peak period to the nearest whole percent. Code this item the same as your update for item 82 if no data is available.

ITEM 82 - % Single Unit Trucks in Average Daily Traffic: Code percent single unit truck traffic in the AADT to the nearest whole percent. You may derive percent trucks from data on a similar route with similar traffic.

ITEM 83 - % Combination Trucks in Peak Period: Code percent combination truck traffic in the peak period to the nearest whole percent. Code this item the same as your update for item 84 if no data is available.

ITEM 84 - % Combination Trucks in Average Daily Traffic: Code percent combination truck traffic in the AADT to the nearest whole percent. You may derive percent trucks from data on a similar route with similar traffic.

Single Unit Trucks have at least 6 wheels with no trailers and Combination Trucks have at least 1 trailer.

ITEM 85 - K-Factor (Design Hour Volume): It is the normal peak hour volume for both directions of travel divided by the AADT. Code the K-Factor to the nearest whole percent. Normal percent ranges are from 6 to 18.

ITEM 86 - Directional Factor (D Factor): Enter the percent of the peak hour volume in the peak direction to the nearest 5%. Normal ranges are from 50 to 75 (enter 50, 55, 60, 65, 70, or 75 etc.). Enter 100 for one-way facilities.

Tuesday

	24 hour count	Peak AM	Peak PM
NB	12275	1314	1344
SB	11340	1198	1115
	23615		

K factor = $\frac{1314 + 1198}{23615} = .106$

K factor = $\frac{1519 + 1110}{24906} = .106$

K factor Average = .106 or 11%

Wednesday

	24 hour count	Peak AM	Peak PM
NB	13201	1335	1519
SB	11705	1113	1110
	24906		

D factor = $\frac{1344}{1344 + 1115} = .547$

D factor = $\frac{1519}{1519 + 1110} = .578$

D factor Average = .562 or 56%

Tuesday

	24 hour count	Peak AM	Peak PM
EB	8227	529	684
WB	7793	513	631

K factor = $\frac{\text{Peak hr vol for both directions}}{\text{AADT}}$

K factor (Tues) = $\frac{684 + 631}{8227 + 7793} = 0.082$

K factor (Wed) = $\frac{730 + 667}{8258 + 8431} = 0.084$

K factor Average = .083 or 8%

Wednesday

	24 hour count	Peak AM	Peak PM
EB	8258	557	730
WB	8431	528	667

D factor = $\frac{\text{Using the highest peak count}}{\text{Sum of that peak period}}$

D factor (Tues) = $\frac{684}{684 + 631} = 0.520$

D factor (Wed) = $\frac{730}{730 + 667} = 0.523$

D factor Average = .522 or 52%

ITEM 97 - Future AADT (Annual Average Daily Traffic)
Code the forecasted two-way AADT for the year coded in Item 98 (Year of Future AADT).

ITEM 98 Year of Future AADT: Code the four-digit year for which Future AADT has been forecasted. This must be within an 18 to 25 year span (2024 to 2031).

Remarks – You may provide remarks to explain any revised data.
Done by – Provide the name of the person who can be contacted regarding the revised data.
Contact Telephone Number – Provide the telephone number of the contact.

If needed, refer to your **HPMS Instructions for Reviewing and Updating Data Items** booklet for this reporting period. A detailed description of each HPMS data item can be found. The latest version is available on the Caltrans Internet web page at:
: http://www.dot.ca.gov/hq/tsip/hpms/index.html